

## MISSION

To develop and integrate Microclimate Cooling and Heating Systems for Military, Emergency Response, Commercial, and Medical applications

## BENEFITS

- Heat stress relief for personnel encapsulated in protective clothing such as body armor and chemical/biological (CB) protective clothing in hot environments
- Personal body heating in cold environments
- Increased mission duration
- Thermal comfort

## TESTIMONIALS

"...I just got back from my first flight with it a couple of hours ago. We flew 5.5 hours in 120 degrees and it worked awesome. The crew agreed this system is the best thing we've done for the helicopter since we put a rotor on it!!!"

*- Helicopter Pilot in Iraq*

"I wanted to pass on to you that since we have had the vests they have become increasingly popular with the platoon...they argue over who gets to wear them. They wanted me to ask for more of them."

*- Infantry Soldier in Iraq*



# MICROCLIMATE CONDITIONING SYSTEMS

## Individual Protection Directorate



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# US ARMY NATICK SOLDIER CENTER



# IPD: Microclimate Conditioning Systems

## AIR WARRIOR MICROCLIMATE COOLING SYSTEM (AWMCS)

- Vapor compression, liquid circulating chiller
- Used on CH-47, UH-60, OH-58D aircraft and the M9ACE
- High level of cooling
- In production



## AIR WARRIOR MICROCLIMATE COOLING GARMENT (AWMCG)

- Tube-lined heat transfer vest
- Hands free break-away connector
- Three sizes
- Interfaces with AWMCS and VMPCS
- In production



## VEHICLE MOUNTED PERSONAL COOLING SYSTEM (VMPCS)

- Supplements air conditioning system; liquid circulating chiller
- Used on HMMWV
- High level of cooling
- In production



## WARRIOR INDIVIDUAL MICROCLIMATE COOLING SYSTEM (WICS)

- Vapor compression, liquid circulating chiller
- 6 pounds
- Portable - battery operated
- Compact (1.5 liters)
- Medium level of cooling
- Prototype



## PERSONAL ICE COOLING SYSTEM (PICS)

- Ice based, liquid circulating chiller
- Used with Level A and B protective ensembles
- 11 pounds
- Portable - battery operated
- Medium level of cooling
- In production



## COMBAT VEHICLE CREWMAN (CVC) MICROCLIMATIC CONDITIONING AIR VEST

- Air Distribution Vest
- Mates with conditioned air system in M1 Abrams
- In production



## BODY VENTILATION SYSTEM (BVS)

- Forced ambient air
- Integrated into the Interceptor Body Armor (IBA)
- 4 pounds
- Portable-battery operated
- Active ventilation
- In production



## INTERCEPTOR VENTILATION VEST (IVV)

- Spacer liner worn between duty uniform and Interceptor Body Armor
- 0.5 pound
- Enhances sweat evaporation
- Fire retardant fabric
- Passive ventilation
- Available



## PERSONAL HEATING SYSTEM (PHS)

- Propane combustion, liquid circulating heating system
- 3.6 pounds
- Portable
- High level of heat
- Prototype

